

# **ELECTROLYTIC ZINC WORKS**

**Nyrstar Hobart**



## **CEREMONY REPORT**

**on the presentation of an**

**ENGINEERING HERITAGE NATIONAL MARKER**

**on 23 April 2013**

**Prepared by  
Engineering Heritage Tasmania**

**May 2013**



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## 1. INTRODUCTION

On 23<sup>rd</sup> April 2013 the Electrolytic Zinc Works, currently owned by Nyrstar, was presented with an Engineering Heritage National Marker by the National President Dr Marlele Kanga. The ceremony was held at the Works in Hobart, and the marker was unveiled by the His Excellency Governor of Tasmania, the Hon Peter Underwood. More than 50 people attended, including Tasmania's Minister for Heritage Brian Wightman and eight other members of Parliament.

His Excellency spoke about the events leading up to the establishment of the Works, Nick Ramshaw described its construction and development, Brian Wightman talked about Tasmania's wonderful heritage, Marlene Kanga outlined the important role of engineers and the heritage recognition program and, in accepting the award Jeremy Kouw, Nyrstar's General Manager paid tribute to employees past and present, many of whom were in the audience.

An excellent interpretation panel designed by the Company was on display, and the ceremony was followed by an optional site tour taken by 25 people.

The Zinc Works was established in 1916 when the facilities for processing zinc ore in Europe were cut off by the World War I, leaving Amalgamated Zinc with an enormous stockpile of high-zinc ore at Broken Hill.

The company was attracted to the site at Risdon by the supply of affordable power from the Waddamana hydro-electric Scheme, the availability of land, access to deep water for a port and a pool of workers to build and operate the plant.

Key people included James Gillies who started development of the Waddamana Power Scheme, William Baillieu who founded the company, Herbert Gepp, the first General Manager, Conrad Snow, Chief Chemist and later General Manager, and Sir Ian Wark who discovered a fundamental relationship between the relative amounts of zinc and acid in an electrolytic cell.

The first industrial small-scale plant, designed to produce 113 kg (250 lb) of zinc a day, started operating in March 1917. Construction was then proceeding in parallel on a much bigger unit, known as the 10-Ton plant which started up in January 1918. In 1920 the Board authorised the construction of a 100-Ton plant. The plant currently produces 800 tons of zinc per day and employs 600 people.

Over the years the zinc ore has come from several different sources: Rosebery, Mt Isa, Elura, Hellyer and Century. Each has different impurities. For example the company has had to find ways to remove iron and cobalt, and to adjust their processes to maintain a quality product. Techniques developed at Risdon have been patented and adopted at plants around the world.

Herbert Gepp was a man with a strong social conscience who advocated cooperation between employees and employers and, to aid this, he set up an Insurance Society and Co-operative Store. He also established a housing scheme in 1919 using land, purchased by the company, next to the site. Sixty homes were built on this site and rented out to employees.

The Hobart plant was the first electrolytic zinc plant in the Southern Hemisphere and an early example worldwide. The Works remain one of the largest and most efficient zinc refineries.

## 2. INVITATION



**Tammy Chu**  
President, Tasmania Division  
Engineers Australia  
&  
**Jeremy Kouw**  
General Manager  
Nyrstar Hobart

cordially invite

*Mr Bill Jordan*

to attend a Ceremony at Nyrstar, Lutana

**on Tuesday 23rd April, 2013 at 10.00am**

to celebrate the unveiling of an

## **Engineering Heritage National Marker**

by His Excellency the Hon. Peter Underwood AC  
Governor of Tasmania

followed by light refreshments

An optional site tour of Nyrstar will commence at 10:50am  
(RSVP for the tour is essential as numbers are limited)

RSVP to  
Tasmania Division Office  
by Thursday 18th April 2013  
Tel: (03) 6234 2228  
[Tasmania@engineersaustralia.org.au](mailto:Tasmania@engineersaustralia.org.au)

## **Information for Attendees**

# **Electrolytic Zinc Works Engineering Heritage Award**

## **Format for Ceremony & Site Tour**

**Tuesday 23<sup>rd</sup> April 2013**

### **Ceremony**

The ceremony will be held at the Nyrstar Hobart Site, Risdon Road, Lutana starting at 10am. Attendees are required to be seated by 9.55am sharp, ready for the arrival of the Governor, The Hon Peter Underwood at 10.00am.

Parking will be available in the car park outside the Main Office (roped off area).

The schedule is:

- 10.00am Governor arrives - unveiling Ceremony commences
- 10.30am Light refreshments
- 10.50am Site tour people assemble
- 11.00am Remainder free to depart

The ceremony will be held outdoors if weather permits. The venue is beyond the left hand end of the main office block, up a few steps.

If the forecast is not encouraging, the ceremony will be held in the main office block. Go up the steps into the main entrance.

### **Site tour**

A site tour will be available, assembling at 10.50am.

If the numbers are five or less it will be a walking tour taking about one hour. You are required to wear a long sleeve top and long trousers, umbrellas are recommended. Nyrstar will supply the safety equipment comprising of steel cap boots, high visibility vest, helmet and goggles.

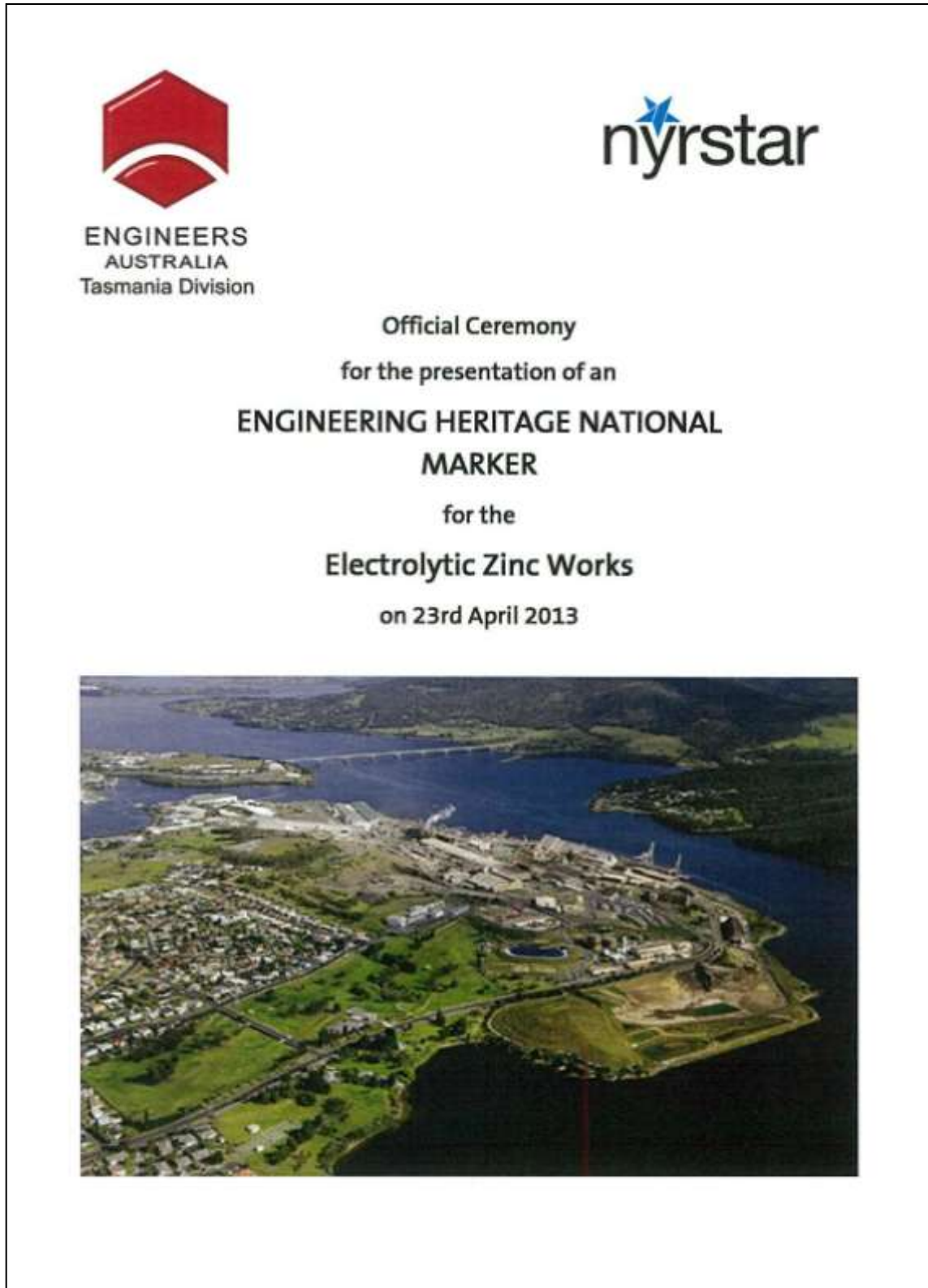
If the numbers are more than five, the tour will be in a minibus, limited to 20 people. Participants will stay in the bus. The tour will take about 45 minutes.

### **Note:**

***When you RSVP, please indicate if you want to take the site tour.***

### 3. SOUVENIR PROGRAM

Program Cover



## A Brief History

Until 1914 zinc production was largely carried out in Belgium (20% of the world's production), Germany (26%), and the USA (32%). Britain sourced most of its supplies from Belgium and Germany, but with the outbreak of the First World War there was a shortage of zinc metal, required to make munitions, in the British Empire. To exacerbate matters the Australian concentrates from Broken Hill had been processed in Europe, so the war created an immediate interest in producing zinc in Australia.

Amalgamated Zinc (de Bavay's) Limited, who owned thousands of tonnes of high-zinc concentrate at Broken Hill, started investigating electrolytic zinc production. Herbert Gepp, the General Manager of the company, who was in America at that time trying to find markets for concentrate, was instructed to investigate the process. His reports were favourable, so the company looked to set up a site in Tasmania, because of the affordable power to be shortly available, and signed a contract with the Government for the supply of power.

The new company was incorporated in Victoria on Friday 2<sup>nd</sup> June 1916 as the Electrolytic Zinc Company of Australasia Propriety Limited.

Risdon was selected as the site for the Zinc Works because of the availability of land, access to deep water to establish a port and a pool of workers to build and operate the plant.

The first industrial small-scale plant, designed to produce 113 kg (250 lb) of zinc a day, started operating in March 1917. Construction was then proceeding in parallel on a much bigger unit, known as the 10-Ton plant which started up in January 1918. In 1920 the Board authorised the construction of a 100-Ton plant. To finance the expansion, the Company was made public in October 1920, the largest float in Australian history. The preference shares were issued during a financial low point following the war, and Chairman William Baillieu put the family fortune on the line to underwrite the shares.

Key people included James Gillies who started development of the Waddamana Power Scheme, William Baillieu who founded the company, Herbert Gepp, the first General Manager, Conrad Snow, Chief Chemist and later General Manager, and Sir Ian Wark who discovered a fundamental relationship between the relative amounts of zinc and acid in an electrolytic cell.

Nyrstar currently produces over 270,000 tonnes of zinc metal per year, and has more than 600 employees and contractors on site.

**PROGRAM FOR THE  
HERITAGE RECOGNITION CEREMONY**

at Nyrstar Hobart, Lutana, Tasmania

on Tuesday 23<sup>rd</sup> April 2013

***Master of Ceremonies***

**Mr Bruce Cole** FIE Aust CPEng(Ret)

Chair of Engineering Heritage Tasmania, a Special Interest Group of  
Engineers Australia

***Address***

**His Excellency The Honourable Peter Underwood AC**

The Governor of Tasmania

***Constructing the Works***

**Mr Nick Ramshaw**

Senior Metallurgist, Nyrstar Hobart

***Address***

**The Honourable Brian Wightman MP**

Minister for Environment, Parks and Heritage

***Presentation of the Heritage Marker***

**Dr Marlene Kanga** FIEAust CPEng

National President, Engineers Australia

***Unveiling the Heritage Marker***

***Acceptance of the Heritage Marker***

**Mr Jeremy Kouw** BAppSc

General Manager, Nyrstar Hobart

***Conclusion***

**Mr Bruce Cole** FIE Aust CPEng(Ret)



#### Engineering Heritage Recognition Program

The erection of markers attracts public attention to important historic engineering works and sites. A marker is awarded only after the preparation of a detailed nomination and assessment by a national committee.

Engineering icons which have received National Landmarks include the Sydney Harbour Bridge, the Goldfields Water Supply Scheme in Western Australia and the Snowy Mountains Scheme. Australia-wide, over 150 works of significance have been recognised since 1984.

In Tasmania, National Landmarks have been awarded to: Waddamana A Power Station 1916, Cethana Dam 1971, Gordon Dam 1986 and the Ross Bridge 1836.

Engineering Heritage Markers have been awarded to the Richmond Bridge 1825, the Evandale-Launceston Water Supply Scheme 1836, the World's Oldest McNaught Beam Engine 1854 (outside the TAFE College in Hobart), Launceston Water Supply 1857, Kings Bridge 1864, the Tasmania Gold Mine 1877, Duck Reach Power Scheme 1895, Lake Margaret Power Scheme 1914, Vincents Rivulet Bridge 1932, the Tarraleah Power Development 1938, the Boyer Newsprint Mill 1943, six other major dams (Catagunya, Crotty, Devils Gate, Laughing Jack, Miena No 2 and Scotts Peak) and the Tasmanian Transport Museum 1972.

**Engineers Australia** is the peak representative body for the engineering profession, representing more than 100,000 members from all disciplines of the engineering team. We maintain representation in every state and territory.

## 4. THE AWARD CEREMONY

### 4.1 Master of Ceremony's notes

**OPENING** Would you please check that your mobile phones are turned off. Location of toilets and exit.

Your Excellency and Mrs Underwood, The Honourable Brian Wightman, The Honourable Craig Farrell, Senator Carol Brown, Ms Elise Archer, Mr Matthew Groom, Dr Marlene Kanga, Distinguished Guests, Ladies and Gentlemen.

At the start of this ceremony, I would like to acknowledge the traditional owners of this land, past and present.

My name is Bruce Cole and I am the Chair of Engineering Heritage Tasmania which is a Special Interest Group within Engineers Australia that has a specific focus on heritage matters. We run the heritage recognition program, we have an oral history program and we arrange periodic lectures on heritage topics.

On behalf of Engineers Australia and Nyrstar Hobart, I welcome you all, and in particular

- Your Excellency and Mrs Underwood
- Dr Marlene Kanga, National President of Engineers Australia
- Tammy Chu, the President of the Tasmania Division of Engineers Australia
- Jeremy Kouw, the General Manager of Nyrstar Hobart
- Bill Jordan, Head of the Heritage Recognition Committee which determined this award
- Finally the former and present employees of the Zinc Works which currently produce 270,000 tons of zinc metal every year.

Now let us make a start on this Heritage Recognition Ceremony. My task is to introduce the speakers listed in your souvenir program.

#### *INTRODUCE THE GOVERNOR*

Our first speaker, His Excellency the Honourable Peter Underwood, the Governor of Tasmania, needs no introduction. He has been kind enough to officiate at two previous ceremonies. Not only that. In November 2011, His Excellency kindly opened our Engineering Heritage Australia Conference here in Hobart, and at the Government house reception that evening, Mrs Underwood with her musical background, arranged for us to be entertained by lively songs sung by a quartet of Hutchins School boys. Our Governor is an enthusiastic Tasmanian and I invite him to address you about the uses and the importance of zinc in the world today.

### *INTRODUCE NICK RAMSHAW*

Thank you Your Excellency

Nick Ramshaw is a senior metallurgist who has worked for EZ for over 40 years. He is keenly interested in the history of the company right back to its origins and continues to come up with interesting facts. He prepared the nomination for this award and also presented a paper at our Engineering Heritage Australia Conference here in Hobart in 2011.

Nick will outline the construction, development and operation of the Works.

### *INTRODUCE THE HONOURABLE BRIAN WIGHTMAN*

Thank you Nick

As this is a heritage recognition ceremony, we are most fortunate that Tasmania's Minister for Environment, Parks and Heritage, The Honourable Brian Wightman, is able to be here and I invite him to step up to the lectern.

### *INTRODUCE DR MARLENE KANGA*

Thank you Minister

Dr Marlene Kanga, the National President of Engineers Australia, has come down specially for this ceremony. She is having a busy year, visiting all the Divisions and Groups of Engineers Australia, both within the country and overseas, and we appreciate her support at this and other heritage ceremonies during her term of office.

Marlene will tell us about Engineers Australia's Heritage Recognition Program and invite His Excellency to unveil the Marker and Interpretation Panel. There will be a photo opportunity at the end of the ceremony.

### *UNVEILING THE MARKER*

(H E & Marlene, Jeremy to stand by.)

### *INTRODUCE JEREMY KOUW*

Now that the Marker has been presented, it is the responsibility of Nyrstar Hobart to erect the Marker and the Interpretation Panel in public view, and maintain them in good condition.

Can I say that the creation of interpretation panels is a recent innovation by Engineers Australia? The aim is to engage the public in understanding the work of engineers and others associated with important works. These panels are challenging to design. This magnificent panel has been designed by the company.

I now call on Jeremy Kouw, General Manager of Nyrstar Hobart, to accept the Marker, and to outline the current status of the Works.

### *CLOSURE*

Ladies and Gentlemen, in closing the ceremony, I would like to express our sincere thanks to Nyrstar for providing this venue, making the arrangements and providing both the morning tea and the site tour to follow.

We have worked closely with Sharni Driessen who made the task easy and enjoyable. Sharni – would you stand up please.

I now invite you to inspect the marker and the panel, and to partake of morning tea. If you are going on the tour, please join Sharni at 10 past 11.

Thank you.

## **4.2 Governor's Speech**

I must say that I am an admirer of the work of Engineers Australia (Tasmanian Division), through its Engineering Heritage Group, and I feel honoured to have been asked to unveil the Engineering Heritage Marker for the Electrolytic Zinc Works here in Hobart. I think that Engineering Heritage makes a real contribution to our history by celebrating and identifying with markers significant engineering places, plant and other artefacts in this State. This is the third Engineering Heritage Marker that I have been privileged to unveil. The other two were at the Paper Mill at Boyer, to recognise the first machine to produce paper from hardwood, and the other to recognise the importance of the Tasmanian Transport Museum at Glenorchy.

The awards fall into two categories: Engineering Heritage National Landmarks and Engineering Heritage Markers. The importance of them as markers of significant engineering developments in the past is evident from the criteria that the prospective awardees must satisfy. Engineering Heritage Markers are only attached to sites, locations, collections and artefacts of engineering significance which have changed the way in which society lives or functions,<sup>1</sup> and I am sure that you will all agree that the Nyrstar Hobart Zinc Works – or just simply the Zinc Works, as all Tasmanians affectionally know it – is a worthy recipient of an Engineering Heritage Marker.

The Zinc Works, now in its 95th year of continuous production, owes its existence to a visionary called James Gillies. Mr Gillies was a metallurgist who developed a flotation process at Broken Hill and had taken out a patent for this process of producing zinc by electrolysis. Now it appears that, not only was Gillies a visionary, but he was also a good negotiator, for he managed to persuade the Tasmanian government of the day to grant his company the rights to build a dam and a power station in the centre of Tasmania to generate electricity for his zinc processing plant, yet to be built. Both the dam and the power station were built, but Gillies' company ran out of money before the latter came on line. However, in 1914 the government stepped in and took the project on. Gillies continued work to build a zinc and carbide plant at Electra, but as we all now know, only the carbide plant was built.

Now, at that time, most of the world's zinc production was carried on in Belgium, Germany and the USA, with Britain sourcing most of its requirements from Belgium. Australian concentrates from Broken Hill were processed in Europe, so the outbreak of the war in 1915 totally changed the picture for zinc in Australia. Amalgamated Zinc, the company that owned huge piles of concentrate in Broken Hill, but because of the war had nowhere to process it, started to look closely at Gillies' process of electrolytic production of zinc. Enter Mr Herbert Gepp. He was the manager of Amalgamated Zinc and was then

touring America trying to find ways of economically disposing of the big pile of concentrate at Broken Hill. When he heard of Gillies' process, he immediately investigated its feasibility. In the course of doing that, he found that the Tasmanian government was willing to sell large blocks of power at very cheap rates to a company that would use large quantities of electricity such as an electrolytic zinc company.

However, it was all good news for the establishment of an electrolytic zinc company here in Hobart. On 2nd June 1916, the Electrolytic Zinc Company of Australasia was formed and Mr W L Baillieu was elected as Chair of the Board. Four months later, work began on the Risdon site, a location chosen because of the availability of land, deep water to establish a port and a work force living close by. Mr Gepp returned from America and early in 1917 was appointed the General Manager of the works on a princely salary of £1,500 - but he did get free electricity on top of that!!

The first production was experimental and rolled off the plant on 9th February 1917. Its success led to the first industrial, but small scale, plant designed to produce 113 kilos of zinc a day commencing operation on 10th March 1917. The rest, as they say, is history.

The Zinc Works has been and still is an influential force in Hobart. At times it has employed a huge work force and paid wages to hundreds of people who spent them in and around the city. Today, the Hobart smelter is one of the world's largest zinc smelters in terms of production volume. Last year it employed 600 people and produced 272,000 tonnes zinc metal. It is focused on high value added products for export to growing markets in Asia. Its product is an essential ingredient in a hugely diverse range of goods and equipment. According to the International Zinc Association, over 11 million tons of zinc are produced annually worldwide. Fifty per cent of this amount is used for galvanising to protect steel from corrosion. Approximately 17% goes into the production of zinc base alloys, mainly to supply the die casting industry and 17% to produce brass and bronze. Significant amounts are also utilized in rolled zinc applications including roofing, gutters and down-pipes. The remainder is consumed in compounds such as zinc oxide and zinc sulfate.

Now, I interpolate here to say that there is reliable evidence to support the claim that the electricity prices that were offered in 1915 to manufacture zinc were very low, but my recollection is that, even as much as forty or fifty years later, the government spin doctors were still relying on these low prices to boast to the whole world that Tasmanian water power generated electricity was the cheapest in the world, but they omitted to add, but only for those who contracted to use huge blocks of it; for householders, the price was quite different!!

These first-use suppliers then convert zinc into a broad range of products. Main application areas include: construction, transport, consumer goods, electrical appliances and general engineering.

I am sure that everyone here will agree that the Engineering Heritage Group has rightly identified Nyrstar Hobart Zinc Works as a site of engineering significance which has changed the way in which society lives or functions and is, as I say, a fitting recipient of an Engineering Heritage Marker.

### **4.3 Nick Ramshaw's speech**

It is hard, if not impossible, to look back almost 100 years and imagine what life was like in those days. When the plant first started making zinc in early 1917 Australia was in the middle of a war, and at that point the outcome was uncertain.

Communications were generally slow; a letter to England or America would take a month, as would the reply. There was a telegraph service which was quicker, but this was expensive and, in modern parlance, had a low bandwidth. The telephone was no use as Tasmania was not even connected to Victoria until 1936.

When Herbert Gepp was in America he recruited a group of metallurgists and engineers who had experience in zinc production. Imagine what it was like for these men – here they were at the outpost of civilization, with slow communications and an uncertain future regarding the war. As a result they had to rely on their own knowledge and abilities to overcome problems in construction or in plant operations. It is remarkable what they achieved in a short time establishing the plant and overcoming process problems. They were helped in this by Gepp and William Baillieu who were both confident that problems could be sorted out and the plant would be a success - and they were right.

Electrolytic zinc plants were at the cutting-edge of technology at the time as the first commercial plants had only been running for one-to-two years. The early plants were all situated near hydro-electric plants as, at the time, hydro was the only affordable power. Zinc electrolysis requires a lot of power and to a large extent the energy required is dictated by the chemistry, there is no way of substantially reducing this. To give an idea of the power required an average household in Tasmania uses, in a year, enough electricity to electrolyse about three tonnes of zinc. At present production rates this is equivalent to about 90,000 -100,000 households.

Construction on site was carried on at an amazing speed, considering the previously mentioned difficulties, even considering the imperative to produce zinc for the war effort. When the 250-lb plant started production, construction had already started on the 10-Ton plant, and the full-size plant (the 100-Ton plant) was being planned. The 10-Ton plant produced its first zinc in January 1918 and was used to iron out problems before the 100-Ton plant was built. Notice a slight lack of imagination with the names, which didn't allow for increases in production.

Following the war the economy was depressed and it was at this time the company became public to raise money for the 100-Ton plant. William Baillieu put the family fortune on the line to guarantee the share float, such was his confidence. The float was successful and the plant was built with the first cell unit becoming operational in 1921, followed by the next two cell units as construction finished. These three units are still in use today.

To supply power to the 100-Ton plant the Hydro-Electric Department opened a new sub-station in 1922 (in the middle of the present car park). The sub-station was rated at 50,000 horse power and, at the time, was the largest in the Southern Hemisphere. Bringing the electricity to Risdon also enabled it to be

supplied to the wider community in Hobart, kicking off an improvement in living standards to all Tasmanians.

Since those early days continuous improvement has resulted in a remarkably steady increase in production from the 33 t/day of the first unit, up to today's production of 800 t/day. This has only been possible with the efforts of many people who delivered many technical improvements. Some of these people left and moved to other zinc plants, spreading their knowledge around the world.

I'll give one example of a technical achievement, although there are many. When the plant started all the feed material came from Broken Hill, and concentrates from different mines have differing level of impurities. Broken Hill was (is) high in iron, manganese, cobalt, and silica; the impurity that was initially the most troublesome was cobalt, which interferes with the electrolytic process. The technical experts solved this problem early on and patented a couple of methods for purifying the solution of cobalt. One of these, arsenic activation of zinc dust, is used in about half the zinc plants worldwide today.

I am pleased the plant is being recognised for having national significance but I would go further and say, that, in the context of the zinc industry, the site has world significance.

#### **4.4 Dr Marlene Kanga's speech**

Your Excellency The Honourable Peter Underwood, Governor of Tasmania and  
Mrs Underwood

Mr Jeremy Kouw, General Manager, Nyrstar Hobart

Mr Nick Ramshaw, Senior Metallurgist, Nyrstar Hobart

Ms Tammy Chu, President Tasmania Division, Engineers Australia

Ladies and gentlemen, it gives me great pleasure to be here today to mark an achievement in engineering. Everything you see around you involves engineering. Clean water supply, the roads you drove on this morning, the cars that brought you here, the clothes you are wearing and even the pacemakers and other medical devices that some of you may have, involve engineering. Engineering and innovation are peas in a pod. Both are vital to Australia. As a small nation with a highly educated and highly paid workforce, Australia needs more engineering and more innovations. This is where we have a comparative advantage, we need to develop industries that require high brains, enormous creativity and have high barriers to entry. This will be the new wealth of Australia, we can no longer rely on the boom and bust cycles of commodity prices or have an economy that rides on the sheep's back, we need a long term vision that involves engineering.

That long term vision by innovative engineers and entrepreneurs led to the development of the Electrolytic Zinc Works being recognised here today.

Although zinc was first smelted in India in the 12<sup>th</sup> century, this facility is one of the earliest zinc smelters to use electricity. The engineering here has provided economic benefits to Tasmania, to Australia and to the world since 1916. It is fitting that we recognise the important contribution that the engineers and metallurgists at this engineering facility has made and will continue to make to Tasmania and to the world.

The Engineers Australia **Engineering Heritage Recognition Program** provides public recognition to engineering works of historic or heritage significance and to the engineers who created them. This encourages the conservation of our engineering heritage and helps the community to understand engineering and the enormous contribution engineering makes to all aspects of our lives.

There are over 160 historic engineering works Australia-wide that have been recognised with heritage awards. These awards are not given lightly. A formal nomination is prepared to present the history of the work and its heritage significance, under criteria similar to those used for listing on heritage registers around Australia. The nomination is assessed by the national panel which decides whether an award is justified. There are three levels of award: International, National and State.

There have been 21 awards in this State. Today the Electrolytic Zinc Works joins four previous Engineering Heritage National Landmarks:

- **Waddamana A Power Station**, built in 1916, complete with its original turbines and generators, now a museum.
- **The Boyer Newsprint Mill**, built in 1941, the first paper mill in the world to make newsprint from hardwood.
- **Cethana Dam** completed in 1971, a 110 metre high concrete faced rockfill dam which showed the world how to build these dams for trouble-free performance.
- **Gordon Dam** completed in 1984, a 140 metre high arch dam, the highest arch dam and the largest storage in Australia.

Today we have come to recognise the **Electrolytic Zinc Works** which has earned its **Engineering Heritage National Marker** for several reasons:

- It was established in 1916, a pioneering achievement. The Hobart plant was the first electrolytic zinc plant in the Southern Hemisphere and an early example of engineering innovation in zinc production with worldwide significance.
- It was attracted to Tasmania by the prospect of cheap hydro-electric power from the Government's Waddamana Power Development.
- The plant has provided employment for almost 100 years and is one of the world's most efficient zinc producers.
- Technical innovation has been essential in the metallurgical processes and management of environmental discharges
- Enlightened management provided many social benefits including housing, insurance and a cooperative store for employees in the early days of the plant.

I have much pleasure in presenting this **Engineering Heritage National Marker** to the Electrolytic Zinc Works. Nyrstar has produced an attractive Interpretation Panel to go with the marker and I invite His Excellency the Governor to join me in unveiling both the marker and the panel.

#### 4.5 Jeremy Kouw's speech

Your Excellency, Mrs Underwood, Minister Wightman, Dr Kanga, representatives from Engineers Australia and esteemed guests:

In accepting this award provided through the Australian Heritage Recognition Program I would like to acknowledge the hard work, innovation and contribution of the site's employees over its almost 100-year lifespan.

The zinc works site has enjoyed a wonderful history founded on creative and advanced engineering and industry partnerships.

From the site's inception in 1916 when Tasmanian industry entrepreneurs identified an opportunity to attract big business to the State with affordable energy through hydro-electric power, to continuous advancements today, we remain Tasmania's largest exporter.

The site does have a proud history and has always been an important and iconic feature in Tasmania's industrial-economic landscape.

While we are a major Tasmanian employer with more than 600 people on site, there is certainly a sense of community which has been a rich feature of this site since its inauguration, and a special thanks to those past employees who have joined us today.

The plant has produced a number of highly advanced technical metallurgical methods, cementing it as one of the most advanced and reputable in the world, supporting its continued growth from 100 to 800 tonnes per day over the past 96 years of production utilising the same operating footprint.

I would also like to take this opportunity acknowledge and thank Nick Ramshaw for his energy and effort in nominating the site for this award. Apart from being both our elder statesman in terms of our Metallurgical [team](#) and the custodian and keeper of knowledge in terms of the sites history and heritage Nick has also been responsible for our most recent metallurgical breakthrough which has enabled our [business to](#) further enhance its competitive position.

So in conclusion this award is great recognition to all past and present employees who have been associated with the plant's proud history and on behalf of the company I would like to express my sincere gratitude for this recognition.

Thank you very much.

## 5. SITE TOUR ARRANGEMENTS

There were two tour groups, with 11 participants in one group and 12 in the second group.

General Manager Jeremy Kouw, Technical Manager Jurgen Gnoinski and Metallurgist Stephen Ford hosted one group. The second group was led by Deputy General Manager Rachid Ait Maamar and Production Manager Richard Curtis.

The groups saw

- the Roasters where zinc sulphide ore is converted to zinc oxide,
- the Leach Department where zinc oxide is converted to zinc sulphate.
- Electrolysis cell house where zinc metal is attached to aluminium cathodes,
- Casting where zinc metal is poured into ingots.

The tours went for 50 minutes in total. Along the way the production process and some history of the site were explained to the tour participants.

## 6. PHOTOGRAPHS

### 6.1 Ceremony audience



### 6.2 Speakers



**The Hon Peter Underwood AC  
Governor of Tasmania**



**Nick Ramshaw  
Senior Metallurgist**



**The Hon Brian Wightman MHA  
Minister for Heritage**



**Dr Marlene Kanga  
EA National President**



**Unveiling the Marker;  
Governor and EA President**



**Jeremy Kouw  
Nyrstar General Manager**



**Bruce Cole  
Master of Ceremonies**

### 6.3 The Marker and VIPs



L to R: Brian Wightman, Jeremy Kouw, Marlene Kanga, Peter Underwood.



The EHNM Marker Image

## 6.4 Engineering Heritage Tasmania Committee



Marlene Kanga with EHT members Don Chisholm-Smith, Ben Johnston, Bruce Cole and Tony Lee (Peter Spratt absent).

## 6.5 Interpretation Panel



NOTE: The Marker and the Interpretation Panel will be erected in an outside barbecue area where there are already five panels presenting historical and modern information about the company.

## 7. PUBLICITY

### 7.1 Media Release

# MEDIA RELEASE



#### **Hobart's iconic zinc works honoured with national engineering heritage recognition**

The Governor of Tasmania, His Excellency Peter Underwood AC, today recognised the historic engineering significance of Nyrstar Hobart, (formerly known as the Electrolytic Zinc Works), with an Engineering Heritage National Marker.

The significance of such an award is evidenced by the rigorous application and assessment, processed under the direction of the national panel. Three levels of the award are possible – state, national and international.

Established in 1916, the Hobart plant was the first electrolytic zinc plant to be built in the southern hemisphere. The site was selected due to its access to hydro-electric power from the state operated Waddamana Power Development.

Heritage Committee Tasmania Chair Bruce Cole said process engineering innovation at the site has made it a leading producer of zinc worldwide, setting the standard for high quality zinc products.

“The site has produced a number of highly advanced technical metallurgical methods, cementing the plant as one of the most advanced and reputable in the world,

“Further testimony to the innovation of the facility is its longevity. For almost 100 years, the zinc works has had a substantial impact on the local and national economy. Today, the plant produces more than 270,000 tonnes of zinc per year and is Tasmania’s leading exporter, employing more than 600 direct and indirect employees.

“This is only the 22nd marker of its type issued in Tasmania as a part of the Engineers Australia Heritage Recognition Program, increasing public awareness of important historic engineering works at a state, national and international level. Other sites include the Boyer Newsprint Mill (now Norske Skog) and Ross Bridge,” Mr Cole said.

The event will be held on site at Nyrstar, Risdon Road, Lutana. Engineers Australia's National President Dr Marlene Kanga will open the ceremony at 10am.

For more information please visit:

<http://www.engineersaustralia.org.au/events/engineering-heritage-national-marker-electrolytic-zinc-works>

-ENDS-

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Engineers Australia is the peak representative body for the engineering profession, representing more than 100,000 members from all disciplines of the engineering team. We maintain representation in every state and territory.

WEDNESDAY, APRIL 24, 2013

www.themercury.com.au

NEWSFRONT

# Now they've engineered a new landmark

**NEW STAR:** The less-than-picturesque Nyrstar zinc works plant near Lutana has been recognised as an Engineering Heritage National Landmark.

A LIST of Tasmania's main-made treasures would no doubt include the old Cascade Brewery and Port Arthur - and the new - West Point and MOHA.

But take a look at what's getting listed now: Hobart's much-maligned Nyrstar zinc works.

The industrial factory - not exactly

a waterfront beauty - was recognised yesterday by industry body Engineers Australia as an Engineering Heritage National Landmark.

Nyrstar Hobart general manager Jeremy Koser said the award was testament to the hard work, innovation and contribution of employees over its 95-year history.

"From its inception in 1916 when Tasmanian industry entrepreneurs identified an opportunity to attract big business to the state with affordable energy through hydro-electric power, to continuous advancements today, we remain Tasmania's largest exporter," Mr Koser said.

"The plant has produced a number

of highly advanced technical metallurgical methods, combining it as one of the most advanced and reputable in the world."

Environment, Parks and Heritage Minister Brian Wightman said Nyrstar had embraced its role as an innovator in engineering.

"Alongside hydro, the zinc works is

one of Tasmania's great industrial heritage sites," Mr Wightman said.

"The electrolytic zinc works changed the face of industrial zinc processing."

"Tasmania has great natural beauty and a fantastic lifestyle. But we also have an exceptional manufacturing history to be proud of."

### 7.3 ABC Television News 23 April 2013

Marlene Kanga, Jeremy Kouw and Nick Ramshaw were interviewed by an ABC television crew after the ceremony, and the segment appeared on the 7pm ABC TV news that evening, lasting almost 2 minutes.

## Nyrstar wins national award

Updated Tue Apr 23, 2013 8:52pm AEST

**Tasmania's zinc smelter has received a national award in recognition of its historical and engineering significance.**

**PHOTO:** Hobart's zinc smelter has received a national award in recognition of its historical and engineering significance. (Chris Parks: Nyrstar)

**MAP:** Lutana 7009

The industrial plant was built in 1916 at a time when Hobart had no electricity and no telephones.

Hydro power was established to run the plant giving residents their first supply.

Marlene Kanga from Engineers Australia says the Engineering Heritage National Marker award is well deserved.

"We just want to showcase the engineering achievements and they are very significant," Ms Kanga said

"In fact we think that this might even be something that could go up to an international award in the future because it's that significant."

**Topics:** human-interest, awards-and-prizes, lutana-7009

First posted Tue Apr 23, 2013 3:59pm AEST

<http://www.abc.net.au/news/2013-04-23/nyrstar-wins-national-award/4646820?section=tas>

### 7.4 CCH Political Alerts 23 April 2013

HOBART'S ICONIC ZINC WORKS HONOURED WITH NATIONAL ENGINEERING

>>> "CCH Parliament" <politicalalert@cch.com.au> 23/04/2013 10:48 AM >>>

Please find attached: HOBART'S ICONIC ZINC WORKS HONOURED WITH NATIONAL ENGINEERING HERITAGE RECOGNITION (FED) The Governor of Tasmania, His Excellency Peter Underwood AC, today recognised the historic engineering significance of Nyrstar Hobart, (formerly known as the Electrolytic Zinc Works), with an Engineering Heritage National Marker. The significance of such an award is evidenced by the rigorous application and assessment, processed under the direction of the national panel. Three levels of the award are possible - state, national and international. Established in 1916, the Hobart plant was the first electrolytic zinc plant to be built in the southern hemisphere. The site was selected due to its access to hydro-electric power from the state operated Waddamana Power Development. Heritage Committee Tasmania Chair Bruce Cole said process engineering innovation at the site has made it a leading producer of zinc worldwide, setting the standard for high quality zinc product!

s.113Q1709 Total number of pages 1 CCH POLITICAL ALERT: Support - politicalalert@cch.com.au or ph (02) 6273 2070, Mailbox - <http://www.accessap.com.au>

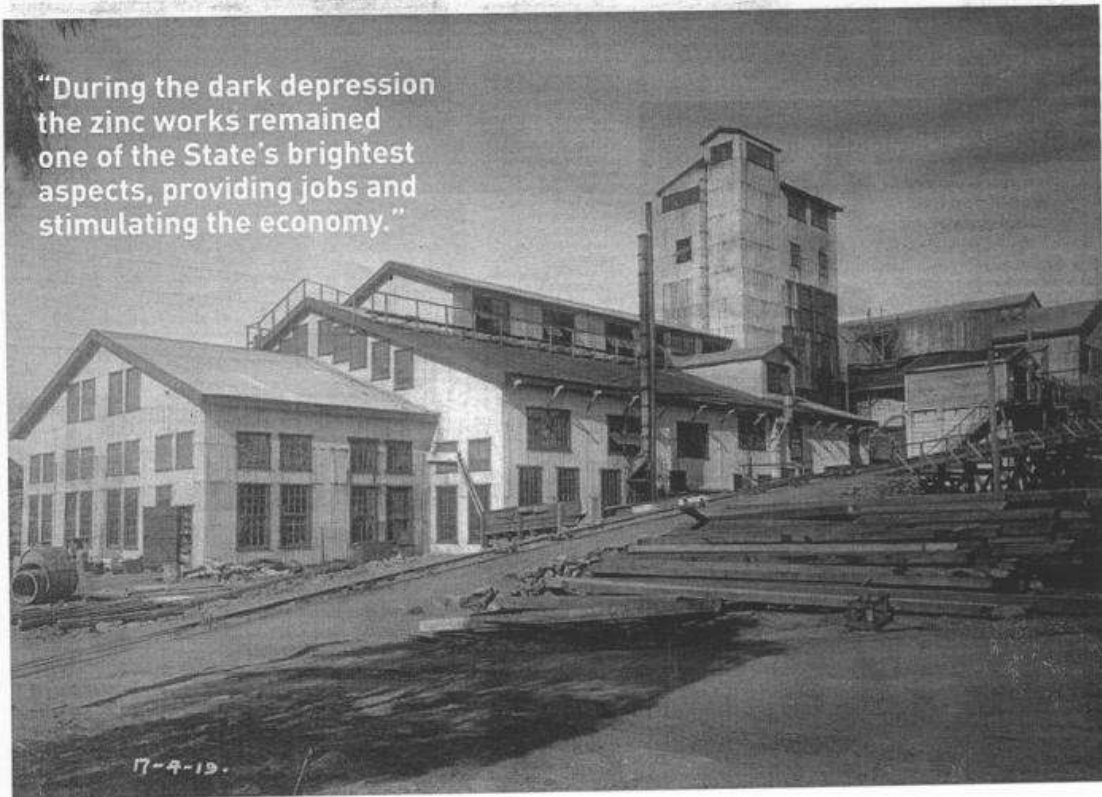
7.5 Glenorchy Gazette May 2013 p.14

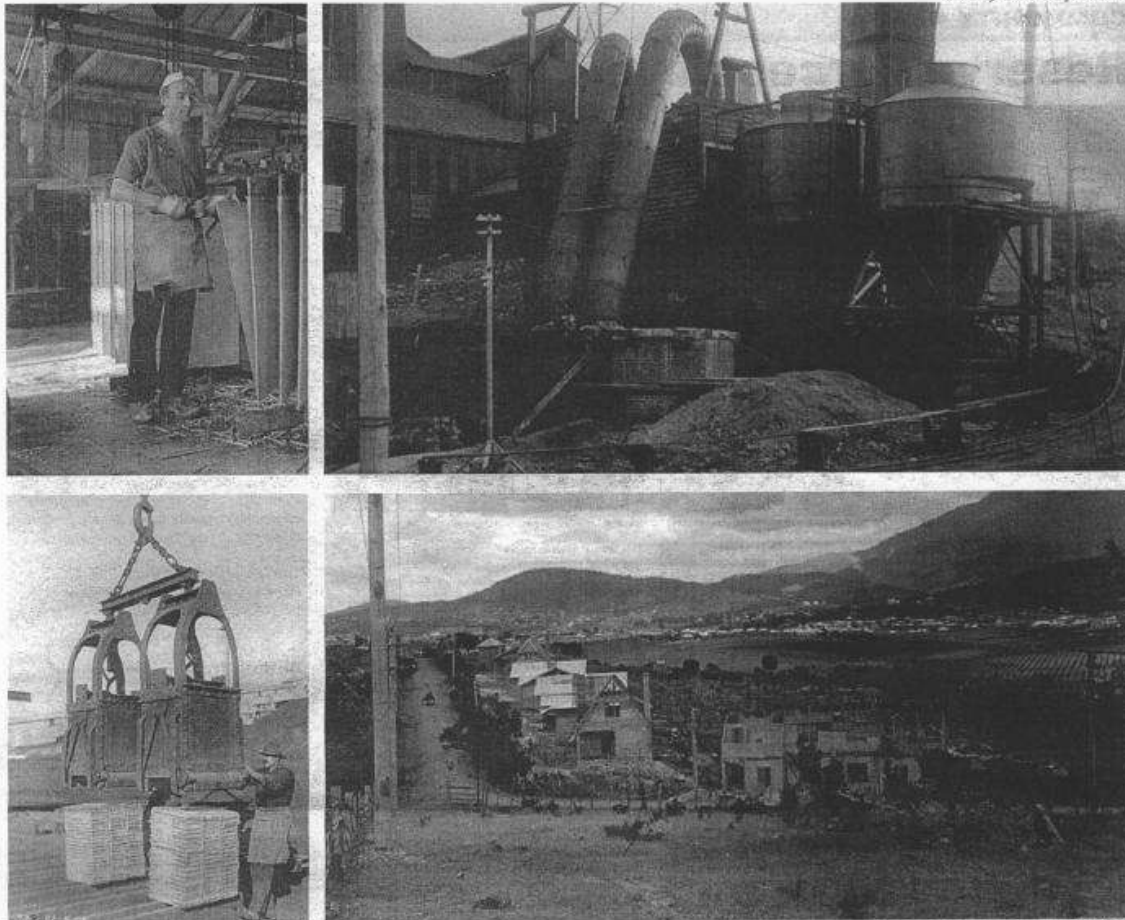
14 Glenorchy Gazette May 2013



# HISTORIC HOBART ZINC WORKS WORLD PIONEER IN ENGINEERING

"During the dark depression the zinc works remained one of the State's brightest aspects, providing jobs and stimulating the economy."





## Nyrstar's historic Hobart zinc works is now recognised as a National Engineering Heritage Landmark.

As a global pioneer in zinc production, and the first large-scale smelter in the southern hemisphere, Tasmania's leading exporter has a rich and proud history based on a culture of innovation.

Renowned Tasmanian industry forefather Jame Gillies was an entrepreneurial metallurgist who had patented a signature zinc production methodology using electrolysis. In 1915 Gillies identified a niche industry opportunity for Australia when World War 1 saw the sale of zinc

concentrates in Europe diminish as Germany overran the production province of Belgium.

Gillies identified Risdon, near Hobart, with its deep river port access, developing economy and available labour force as a market opportunity and convinced the Tasmanian Government to build a dam and power station to lure business to the State.

The construction of the Waddamana Power Station-Scheme by the Hydro Electric Power and Metallurgical company saw an industry partnership which offered large blocks of power at low cost to big business consumers, including those using electrolysis to produce metals. The partnership ensured flow-on benefits to the State through an impressive wages bill and increased freight movements pioneering opportunity for the global market to reach Tasmania.

On 2 June 1916 the Electrolytic

Zinc company of Australasia was formed and William Baillieu was elected Chair of the Board. Times were challenging; a world war raged, communication was poor with little to no telephone service and mail taking weeks to reach the Australian mainland and more than a month to Europe. There was uncertainty on Australia's future but Baillieu believed the zinc works would prosper and put his own family fortune on the line to inspire shareholder confidence as the plant aimed to produce 100 tonnes per day which it achieved by 1921.

In 1922 the Hydro-Electric department constructed a new sub-station at Risdon to specifically supply power for the 100 tonne plant also enabling electricity to be supplied to the wider Hobart community contributing to greatly improved living standards for Tasmanians.

During the dark depression the zinc works remained one of the

State's brightest aspects, providing jobs and stimulating the economy. Now 95 years on, the Nyrstar site remains an integral economic driver for Tasmania producing more than 800 tonnes of zinc daily and employing more than 650 direct and indirect people at the site.

The leading contributor to Tasmania's state gross profits, the zinc works continues to fuel the export market. With health, safety and the environment a major focus Nyrstar has continued to build and improve on its sustainable environmental practices through processes including stormwater harvesting and recycling. Under this project Nyrstar looks forward to rehabilitation and greening the plant to be more in keeping with Tasmania's natural surrounds.

**nyrstar**